Cisco Etherswitch Service Modules for Cisco 2600, 2800, 3700, and 3800 Series Routers

Cisco® EtherSwitch® network and interface card modules are innovative solutions that can reduce total cost of ownership for customers by optionally integrating switch ports within a router. This integration allows network administrators to manage a single device utilizing the router command-line interface (CLI) for LAN and WAN management needs. This approach reduces network complexity, IT staff training needs, equipment sparing requirements, and maintenance costs.

Product Overview

The new Cisco EtherSwitch service modules, pictured in Figure 1, greatly expand the capabilities of integrated switching within Cisco routers by providing support for new features such as IEEE 802.3af Power over Ethernet (PoE), local Layer 3 switching, Cisco Network Assistant and Cisco Emergency Responder, and Cisco StackWise™ interfaces (available on NME-XD-24-1S-P only), as well as common software and features with Cisco Catalyst® 3750 and 3750-E Series Switches. Additionally, the new Cisco EtherSwitch service modules are the first modules that can take full advantage of the increased performance capabilities and new form factors of the enhanced network module slot on Cisco integrated services routers. (Table 7 provides a list of supported platforms).

Figure 1. Cisco EtherSwitch Service Modules with IEEE 802.3af Support

Secure Network Connectivity for Data, Voice, and Video

When combined with a Cisco integrated services router, such as the Cisco 2821 pictured in Figure 2, the new Cisco EtherSwitch service modules can provide a fully integrated secure networking and converged IP Communications solution. From a single platform, IP phones can be connected to the network and powered using the IEEE 802.3af standard or pre-standard Cisco Power over Ethernet (PoE). With the optional addition of Cisco Communications Manager Express (formerly CallManager Express), the router can also provide the call processing for these phones. Further, as users attempt network access through the Cisco EtherSwitch service module, the module can use 802.1x to validate the end device's credentials and place the user in the appropriate VLAN. As the end-user data leaves the LAN, the router can encrypt the traffic, helping to ensure secure communications between branch offices and central sites. This high degree of convergence greatly simplifies network architecture and allows for advanced services to be deployed to the branch level in a cost-effective manner.

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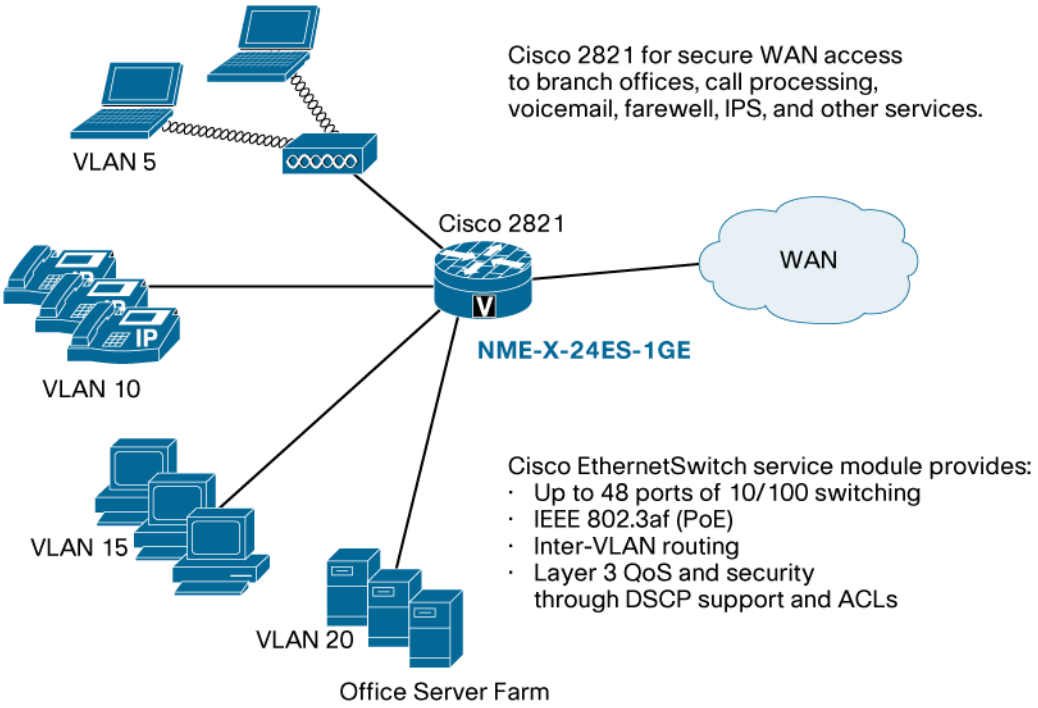
Figure 2. Cisco EtherSwitch Service Module with a Cisco 2821 Integrated Services Router



Features and Benefits

Architecture Feature and Benefits

The new Cisco EtherSwitch service modules help ensure maximum availability, high performance, ease of upgrade, and expandability. The modules have their own processors, switching engines, and Flash memory that run independent of the host router resources, helping to ensure maximum concurrent switching and routing performance as well as providing integrated PoE, security, and increased ease of management. Additionally, Cisco EtherSwitch service modules run their own Cisco IOS® Software, independent of the router's Cisco IOS Software image, allowing for easy upgrades and ongoing software and feature commonality with Cisco Catalyst 3750 and 3750-E Series Switches. Table 1 lists some of the features and benefits of this advanced architecture.

Table 1. Cisco EtherSwitch Service Module Architecture Features and Benefits

Feature	Benefit
Increased Switch Port Density	• The new Cisco EtherSwitch service modules are the first enhanced network modules (NMEs) to take advantage of the NME-X and NME-XD form factors; the NME allows for up to a 1-Gb backplane connection to the host router. • The new NME-X and NME-XD form factors allow for new higher-density switch modules, such as the 24-port NME-X and 48-port NME-XD switch modules (Table 10).
Independent Software Image	• The Cisco EtherSwitch service module runs its own Cisco IOS Software image and can be upgraded independent of the host router's Cisco IOS Software release. • The Cisco EtherSwitch service module uses the same software images as the Cisco Catalyst 3750 Series, helping to ensure software feature parity and compatibility.

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Feature	Benefit
High-Performance IP Routing on the EtherSwitch Service Module	• The Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing. • Basic IP unicast routing protocols (static, Routing Information Protocol Version 1 [RIPv1], and RIPv2) are supported for small-network routing applications. • IPv6 routing support in hardware allows for maximum performance in the future (IPv6 routing support requires Advanced IP Services Software). • Inter-VLAN IP routing enables full Layer 3 routing between two or more VLANs. • Advanced IP unicast routing protocols (Open Shortest Path First [OSPF], Interior Gateway Routing Protocol [IGRP], Enhanced IGRP [EIGRP], and Border Gateway Protocol Version 4 [BGPv4]) are supported for load balancing and constructing scalable LANs (requires IP Services Software)

Secure Networking

Because security needs to be embedded throughout the network, switches play a critical role in any network defense strategy. Cisco EtherSwitch service modules provide a rich set of security features and can be a crucial component of your secure network strategy (Table 2). As more devices become IP-aware and seek to access the network, being able to identify endpoints and provide user authentication on a per-port basis becomes critical. Cisco EtherSwitch service modules help ensure trust and identity with support of IEEE 802.1x plus enhancements that are specific to Cisco. When combined with the advanced security features of Cisco Integrated Services Routers, Cisco EtherSwitch service modules help to ensure networkwide security.

Table 2. Network Security Features and Benefits Provided by Cisco EtherSwitch Service Modules

Feature	Benefit
Extended IEEE 802.1x Support	• IEEE 802.1x allows dynamic, port-based security, providing user authentication. • IEEE 802.1x with VLAN assignment allows a dynamic VLAN assignment for a specific user, regardless of where the user is connected; clients without 802.1x can have limited access using a guest VLAN. • IEEE 802.1x with voice VLAN permits an IP phone to access the voice VLAN, regardless of the authorized or unauthorized state of the port. • IEEE 802.1x and port security are provided to authenticate the port and manage network access for all MAC addresses, including that of the client. • IEEE 802.1x with an access control list (ACL) assignment allows for specific identity-based security policies, regardless of where the user is connected. • The modules support IEEE 802.1x authentication with MAC authentication bypass. • The modules support Network Admission Control Layer 2 IEEE 802.1x validation. • The modules support multidomain authentication.
Wire-Speed ACLs	• Port-based ACLs allow security policies to be applied on individual switch ports. • IP ACLs can be processed directly on the Cisco EtherSwitch service module for inter-VLAN traffic or traffic outbound from any VLAN interface without affecting the router CPU.
Dynamic Host Control Protocol (DHCP) Snooping	Prevents rogue devices from behaving as the DHCP server.
Dynamic Address Resolution Protocol (ARP) Inspection (DAI)	• Maintains a binding table containing IP and MAC address associations that have been dynamically populated using DHCP snooping. • Helps to ensure the integrity of user and default gateway information such that traffic cannot be captured.
IP Source Guard	• Automatically configures a port ACL for the IP address, and adds the MAC address to the port security list for the port. DHCP snooping allows learning and binding of IP address and MAC address by the switch. Removes ACL and MAC entry when lease expires. • Prevents snooping of data or anonymous launching of attacks.
Port Security	• Limits the number of MAC addresses that are able to connect to a switch and helps ensure that only approved MAC addresses are able to access the switch. • Limits MAC flooding attacks, locks down ports, and sends a Simple Network Management Protocol (SNMP) trap.
Simplified Management	• The user-selectable address learning mode simplifies configuration and enhances security. • Cisco Network Assistant Software security wizards ease the deployment of security features for restricting user access to a server, as well as to a portion or all of the network.

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Advanced PoE Support

The new Cisco EtherSwitch service modules (NME-16ES-1G-P, NME-X-23ES-1G-P, NME-XD-24ES-1S-P, and NME-XD-48ES-2S-P only) are capable of providing both Cisco pre-standard and IEEE 802.3af Power over Ethernet (PoE) support when inserted in Cisco 2800 Series or 3800 Series Integrated Services Routers (requires an upgrade to an AC-IP power supply). 802.3af is the IEEE standard for delivering power to Ethernet ports. The new Cisco EtherSwitch service modules offer many benefits in regards to PoE support (Table 3) and can be used to power devices such as access points, IP phones, and other powered devices. Cisco EtherSwitch service modules are the first network modules offered by Cisco that are capable of supporting 802.3af-compliant devices. The type of PoE that is delivered to the Ethernet ports differs by platform. Table 3 details PoE (Cisco pre-standard and 802.3af) support on a platform and module combination basis.

Table 3. PoE Features and Benefits

Feature	Benefit
PoE Support Compliant with IEEE 802.3af	• When used in a host router platform that is capable of providing 802.3af support such as the Cisco 2800 Series or 3800 Series (requires AC-IP power supply), the PoE-capable Cisco EtherSwitch service module can provide PoE to ports in compliance with the IEEE 802.3af specification (not available on Cisco 2691 or 3700 Series routers). • Provides up to 15W of power per port; total PoE delivery capability varies by the router host (Table 9). • Can be used to power any IEEE 802.3af-compliant devices such as IP phones, access points, card readers, and Web cameras.
Cisco Pre-standard PoE Support	• Can support Cisco devices based on Cisco's pre-standard implementation of PoE • NME-16ES-1G-P can be used with routers that are not capable of supporting IEEE 802.3af, such as Cisco 3700 Series routers, to provide Cisco pre-standard PoE (not available on Cisco 2691 routers).
Superior Redundancy for Fault Backup	• The Cisco RPS 2300 Redundant Power Supply can provide redundancy for the internal power supply on the Cisco 2800 Series or 3800 Series routers, for the PoE provided by the EtherSwitch service modules, and for up to six other Cisco networking devices. • Cisco 3845 and 3745 routers have dual internal power supply options that can be used to provide redundancy for the internal power supply of the routers and for in the PoE provided by the EtherSwitch service modules.

Cisco StackWise Technology Support

The new NME-XD-24-1S-P Cisco EtherSwitch service module provides two Cisco StackWise connectors for interconnection with Cisco Catalyst 3750 and 3750-E Series switches. The Cisco StackWise architecture (Table 4) is a stacking architecture that is optimized for Gigabit Ethernet and designed to respond to stack additions and deletions, as well as redeployment while maintaining constant performance. Cisco StackWise technology unites individual Cisco Catalyst 3750 Series switches with the NME-XD-24-1S-P module into a single logical unit, using special stack-interconnect cables and stacking software. The stack behaves as a single switching unit that is managed by a master switch elected from one of the member switches. The master switch automatically creates and updates all of the switching and optional routing tables. A working stack can accept new members or delete old ones without service interruption.

Integrating Cisco StackWise technology into a Cisco integrated services router allows network managers to manage an entire stack of switches from the router CLI or with Cisco Network Assistant software, lowering operational costs by streamlining the checking of software versions, loading of global configuration parameters, and simplifying deployment of additional ports. For rapidly growing businesses, Cisco StackWise technology allows customers to pay for only what they need, and to easily add new switches to the stack as additional ports are needed.

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Table 4. Cisco StackWise Technology Features and Benefits

Feature	Benefit
Ease of Use and Deployment	• The NME-XD-24-1S-P Cisco EtherSwitch service module can serve as a stack member or stack master in a stack with up to eight Cisco Catalyst 3750 Series Switches. When acting as a stack master, the NME-XD-24-1S-P can manage the entire stack from the router CLI. • A working stack is self-managing and self-configuring. When switches are added or removed, the master switch automatically loads the Cisco IOS Software version running on the stack to the new switch, loads the global configuration parameters, and updates all of the routing tables to reflect changes. Upgrades are applied universally and simultaneously to all members of the stack.
High-Performance Stack Interconnect	• Cisco StackWise stacking creates a 32-Gbps switch interconnection. • Stacking does not require user ports.
Superior Redundancy for Fault Backup	• 1:N master redundancy allows each stack member to serve as a master, providing the highest reliability for forwarding. • Cisco CrossStack UplinkFast (CSUF) technology provides increased redundancy and network resiliency through fast spanning-tree convergence (less than two seconds) across a switch stack with Cisco StackWise technology. • Cisco CrossStack EtherChannel® provides the ability to configure Cisco EtherChannel technology across different members of the stack for high resiliency. Inter-VLAN IP routing provides for full Layer 3 routing between two or more VLANs.

Ease of Management

Cisco EtherSwitch service modules are highly manageable devices that offer many ease-of-management advantages (Table 5). For instance, the service modules can be managed via the host router CLI, providing one point of management for the LAN and WAN portions of the network. Since the Cisco EtherSwitch service modules run the same software image as the Cisco Catalyst 3750 Series, the CLI commands are identical to those used on the Cisco Catalyst 3750 Series. This greatly simplifies management of the Cisco EtherSwitch service modules, resulting in lower training costs, and a reduction in the chance of configuration errors. Additionally, the Cisco EtherSwitch service modules can be managed using one of Cisco's advanced GUI software suites such as the EtherSwitch's embedded device manager or CiscoView (contained in CiscoWorks LMS). These easy to use Web-based management interfaces can be accessed through a standard Web browser.

Table 5. Management Features and Benefits

Feature	Benefit
Single CLI for LAN and WAN	• Reduces management challenges and eases troubleshooting in the event of network downtime, significantly reducing operational expenditures (OpEx) and increasing network uptime. • The Cisco EtherSwitch service module's CLI is accessed using the router CLI. • When the NME-XD-24-1S-P is used, a stack of Cisco Catalyst 3750 Series Switches can be managed from the router CLI.
Cisco Network Assistant Software	• Cisco Network Assistant provides an easy-to-use, GUI-based management interface. • Cisco Unified Communications wizards need just a few user inputs to automatically configure the switch module to optimally manage different types of traffic, including voice, video, multicast, and high-priority data. • A security wizard is provided to restrict unauthorized access to applications, servers, and networks. • Can be used to manage interconnected Cisco Catalyst switches.
Cisco Smartports	Simple macros help enable advanced QoS features with one command, instead of multiple commands in the configuration file.
Cisco CNS Configuration Engine	Supports the activation of customer premises equipment (CPE)-based network services through centralized template-based configuration management.
CiscoWorks CiscoView	Available from CiscoWorks LAN Management Solution (LMS), CiscoView provides a graphical "front panel" interface for managing Cisco devices. It allows users to easily interact with device components for at-a-glance port status, and easy device configuration and monitoring.

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Summary/Conclusion

As companies strive to lower the costs of running their networks and to increase the productivity of their end users with network applications, more intelligent branch office solutions are required. Cisco EtherSwitch service modules enable a higher level of security and provide PoE for IP Communications, easy expandability, and simplified management at the branch office level. By minimizing OpEx without sacrificing any advanced switching features, Cisco EtherSwitch service modules can help you maximize your return on investment (ROI) for your network infrastructure and accelerate the deployment of productivity-enhancing services to enterprise branch offices and small to midsized businesses.

Product Specifications

Table 6. Product Specifications

Module	NME-16ES-1G	NME-16ES-1G-P	NME-X-23ES-1G	NME-X-23ES-1G-P	NME-XD-24ES-1S-P	NME-XD-48ES-2S-P
Product Architecture						
Ports	• 10/100: 16 • 10/100/1000: 1 • Small Form-Factor Pluggable (SFP): 0	• 10/100: 16 • 10/100/1000: 1 • SFP: 0	• 10/100: 23 • 10/100/1000: 1 • SFP: 0	• 10/100/1000: 1 • 10/100: 23 • SFP: 0	• 10/100: 24 • 10/100/1000: 0 • SFP: 1	• 10/100 : 48 • 10/100 /1000: 0 • SFP: 2
Cisco StackWise Connectors	No	No	No	No	Yes	No
Powered switch ports	0	16	0	24	24	48
Cisco pre-standard PoE support	No	Yes[1]	No	Yes[1]	Yes[1]	Yes[1]
IEEE 802.3af PoE support	No	Yes[1]	No	Yes[1]	Yes[1]	Yes[1]
Cisco Emergency Responder	Yes					
Cisco IOS Software						
Minimum Cisco IOS Software release for Cisco EtherSwitch service module	12.2(25)SEC	12.2(25)EZ	12.2(25)SEC	12.2(25)EZ		
Default Cisco EtherSwitch service module feature set	IP Base					
Minimum Cisco IOS Software Release for the host router	12.4(3), 12.4(4)T	12.3(14)T, 12.4(1)	12.4(3), 12.4(4)T	12.3(14)T, 12.4(1)		

[1] When installed in Cisco 3700 Series routers, the modules can only provide Cisco pre-standard PoE. The Cisco EtherSwitch service modules do not support any PoE when installed in the Cisco 2691 router.

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Module	NME-16ES-1G	NME-16ES-1G-P	NME-X-23ES-1G	NME-X-23ES-1G-P	NME-XD-24ES-1S-P	NME-XD-48ES-2S-P
Minimum Cisco IOS Software feature set	IP Base					
Physical and Environmental Specifications						
Network module form factor	NME		NME-X		NME-XD	
Dimensions (H x W x D)	1.6 x 7.1 x 7.4 in. (40.4 x 180.3 x 188.0 mm)		1.59 x 8.05 x 7.4 in. (40.4 x 204.5 x 188.0 mm)		1.59 x 15.87 x 6.3 in. (40.4 x 403.1 x 160.2 mm)	
Weight	1.5 lbs (0.68 kg)		1.7 lbs (0.77kg)		2.8 lbs (1.27 kg)	3.0 lbs. (1.36 kg)
Operating humidity	5 to 95%, noncondensing					
Operating temperature	32 to 104°F (0 to 40°C)					
Nonoperating temperature	–40 to 158°F (–40 to 70°C)					
Network Management						
CiscoWorks CiscoView (contained in CiscoWorks LMS)	Yes					
Cisco Router and Security Device Manager (SDM)	• Yes, with Cisco SDM 2.2 or greater • Manages router and provides launch point for Cisco EtherSwitch embedded device manager					
Cisco Network Assistant	Yes, with Cisco Network Assistant 2.1 or later					
EtherSwitch embedded device manager	Yes					
Smartports	Yes					
Standards						
IEEE 802.1s	Yes					
IEEE 802.1w	Yes					
IEEE 802.1x	Yes					
IEEE 802.3ad	Yes					
IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports	Yes					
IEEE 802.1D Spanning-Tree Protocol	Yes					
IEEE 802.3af	Yes					
IEEE 802.3ae	Yes					

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Table 7. Platform Support

Cisco EtherSwitch Service Module	Cisco 2600 Series	Cisco 2800 Series	Cisco 3700 Series	Cisco 3800 Series
NME-16ES-1G	2691 only	2811, 2821, and 2851 only	Yes	Yes
NME-16ES-1G-P	2691 only	2811, 2821, and 2851 only	Yes	Yes
NME-X-23ES-1G	No	2821 and 2851 only	No	Yes
NME-X-23ES-1G-P	No	2821 and 2851 only	No	Yes
NME-XD-24ES-1S-P[2]	No	2851 only	No	Yes
NME-XD-48ES-2S-P	No	2851 only	No	Yes

Table 8. PoE Support by Platform

Cisco EtherSwitch Service Module	Cisco 2600 Series	Cisco 2800 Series	Cisco 3700 Series	Cisco 3800 Series
NME-16ES-1G	NME-16ES-1G does not support PoE			
NME-16ES-1G-P	No PoE available[3]	Cisco pre-standard and 802.3af PoE support[4]	Cisco pre-**4** standard PoE only	Cisco pre-standard **4** and 802.3af PoE support
NME-X-23ES-1G	NME-X-23ES-1G does not support PoE			
NME-X-23ES-1G-P	Not supported	Cisco pre-standard and 802.3af PoE support**4**	Not supported	Cisco pre-standard **4** and 802.3af PoE support
NME-XD-24ES-1S-P	Not supported	Cisco pre-standard and 802.3af PoE support**4**	Not supported	Cisco pre-standard **4** and 802.3af PoE support
NME-XD-48ES-2S-P	Not supported	Cisco pre-standard and 802.3af PoE support**4**	Not supported	Cisco pre-standard and 802.3af PoE support**4**

Table 9. Maximum PoE Delivery by Platform with Cisco EtherSwitch Service Module

Router	Maximum PoE Delivery
Cisco 2691*	No PoE available
Cisco 3725,***	360W
Cisco 3745,***	360W
Cisco 2811**	160W
Cisco 2821**	240W
Cisco 2851**	360W
Cisco 3825**	360W
Cisco 3845**	360W

* NME-16ES-1G-P is supported on the Cisco 2691, but no PoE support is available.
** Requires upgrading the router's internal power supply to an AC-IP version.
*** Cisco 3725 and 3745 routers only support Cisco pre-standard PoE; they do not support IEEE802.3af

[2] Only one Cisco EtherSwitch service module per chassis is supported if NME-XD-24ES-1S-P is used, otherwise up to two Cisco EtherSwitch service modules are supported per chassis where network module slot density allows.
[3] NME-16ES-1G-P is supported on the Cisco 2691, but no PoE support is available.
[4] Requires upgrading the router's internal power supply to an AC-IP version.

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Table 10. Maximum Cisco EtherSwitch Service Module Ports per Router

Platform	Cisco EtherSwitch Service Modules Per Router[5]	Maximum Cisco EtherSwitch Service Modules Ports Per Router[6]
Cisco 2691	1	16
Cisco 2811	1	16
Cisco 2821	1	24
Cisco 2851	1	48
Cisco 3725	2	32
Cisco 3745	2	32
Cisco 3825	2	72
Cisco 3845	2[7]	96

Regulatory Compliance, Safety, EMC, Telecommunications, and Network Homologation

When installed in a Cisco 2600, 2800, 3700, or 3800 series router, the Cisco EtherSwitch service module does not change the standards (regulatory compliance, safety, EMC, telecom, network homologation) of the router itself. For more information on these routers, visit:

- http://www.cisco.com/en/US/products/hw/routers/ps259/index.html
- http://www.cisco.com/en/US/products/hw/routers/ps282/index.html
- http://www.cisco.com/en/US/products/ps5854/index.html
- http://www.cisco.com/en/US/prod/collateral/routers/ps5855/product_data_sheet0900aecd8016a8e8.html

Ordering Information

Table 11 provides ordering information for Cisco EtherSwitch service modules. To place an order, visit the Cisco Ordering Home Page.

Table 11. Ordering Information

Part Number	Product Name and Description
NME-16ES-1G	One 16-port 10/100 Cisco EtherSwitch service module, 1 10/100/1000 port, and IP Base
NME-16ES-1G-P	One 16-port 10/100 Cisco EtherSwitch service module w/802.3af, 1 10/100/1000 port, and IP Base
NME-X-23ES-1G	One 23-port 10/100 Cisco EtherSwitch service module, 1 10/100/1000 port, and IP Base
NME-X-23ES-1G-P	One 23-port 10/100 Cisco EtherSwitch service module w/802.3af, 1 10/100/1000 port w/ 802.3af, and IP Base
NME-XD-24ES-1S-P	One 24-port 10/100 Cisco EtherSwitch service module w/802.3af, 1 SFP, Cisco StackWise connectors, and IP Base
NME-XD-48ES-2S-P	One 48-port 10/100 Cisco EtherSwitch service module w/802.3af, 2 SFPs, and IP Base
CD-3750-EMI=	EMI upgrade for Cisco Catalyst 3750 Series Fast Ethernet models and Cisco EtherSwitch service modules
CAB-STACK-3M=	Cisco StackWise 3m Stacking Cable
CAB-STACK-50CM=	Cisco StackWise 50 cm Stacking Cable

[5] Only one Cisco EtherSwitch service module per chassis is supported if NME-XD-24ES-1S-P is used, otherwise up to two Cisco EtherSwitch service modules are supported per chassis where network module slot density allows

[6] Additional PoE and switch ports can be added to the router with the Cisco EtherSwitch HWICs and network modules, but the EtherSwitch HWICs cannot be stacked with the EtherSwitch service modules.

[7] You cannot only utilize a maximum of two Cisco EtherSwitch service modules per chassis. Four NME-16ES-1G-P or NME-XD-23-1G-P modules cannot be used in a Cisco 3845 or 3745 series router. To maximize switch port density, two 48-port Cisco EtherSwitch service modules should be used on the Cisco 3845 series router.

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Part Number	Product Name and Description
CAB-STACK-1M=	Cisco StackWise 1m Stacking Cable
CAB-STACK-50CM-NH=	Cisco StackWise 50 cm non-halogen lead-free stacking cable
CAB-STACK-1M-NH=	Cisco StackWise 1m non-halogen lead-free stacking cable
CAB-STACK-3M-NH=	Cisco StackWise 3m non-halogen lead-free stacking cable
GLC-GE-100FX	100FX SFP on GE SFP ports
GLC-GE-T	1000BASE-T SFP
GLC-LH-SM=	Gigabit Ethernet SFP, LC connector, LX/LH transceiver
GLC-SX-MM=	Gigabit Ethernet SFP, LC connector, SX transceiver
GLC-ZX-SM=	1000BASE-ZX SFP

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you to protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, see Cisco Technical Support Services or Cisco Advanced Services.

For More Information

This document describes information about Cisco EtherSwitch service modules only. For more information about Cisco EtherSwitch service modules, contact your local account representative.

For information about the Cisco EtherSwitch network modules, a data sheet is available at http://www.cisco.com/en/US/prod/collateral/routers/ps259/product_data_sheet09186a00801aca3e.html.

For information about the Cisco 3750 Catalyst Switches, a data sheet is available at http://www.cisco.com/en/US/products/hw/switches/ps5023/products_data_sheets_list.html.

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